

We claim:

- 5 1. A polymer dispersion comprising
- 10 i) polymer particles dispersed in an aqueous medium and composed of units of ethylenically unsaturated monomers,
- 10 ii) a water-soluble polymeric polyelectrolyte which along a polymeric backbone carries a large number of ionic groups of uniform charge character or groups which can be ionized to such groups, and
- 15 iii) an ionic surfactant which carries an ionic group having a charge character opposite to that of the polymeric polyelectrolyte, or a group which can be ionized to such a group.
- 20 2. A polymer dispersion as claimed in claim 1, wherein the polyelectrolyte and the ionic surfactant are in a weight ratio, based on solids, of from 20:1 to 1:1.
- 25 3. A polymer dispersion as claimed in claim 1 or 2, which additionally comprises a nonionic surfactant.
- 30 4. A polymer dispersion as claimed in claim 1, 2 or 3, wherein the polyelectrolyte is composed of units of ethylenically unsaturated monomers and 20-100% by weight, based on the total monomer units, of units of ethylenically unsaturated C<sub>3</sub>-C<sub>8</sub> monocarboxylic acids; C<sub>4</sub>-C<sub>8</sub> dicarboxylic acids or their monoesters; sulfonic acids; sulfuric monoesters or phosphonic acids and/or salts thereof, and the ionic surfactant is a quaternary ammonium salt having at least one hydrocarbon chain of at least 6 carbon atoms.
- 35 5. A polymer dispersion as claimed in claim 1, 2 or 3, wherein the polyelectrolyte is composed of units of ethylenically unsaturated monomers and 20-100% by weight, based on the total monomer units, of units of ethylenically unsaturated sulfonic acids, sulfuric monoesters or phosphonic acids and/or salts thereof and the ionic surfactant is an amine having at least one hydrocarbon chain of at least 6 carbon atoms, or a protonated form thereof.
- 40 6. A polymer dispersion as claimed in claim 1, 2 or 3, wherein the polyelectrolyte is composed of units of ethylenically unsaturated monomers and 20-100% by weight, based on the
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total monomer units, of units of monoethylenically unsaturated monomers which carry a quaternary ammonium group or a protonizable amino group.

- 5 7. A polymer dispersion as claimed in any of the preceding claims, wherein the polyelectrolyte has a degree of polymerization of less than 2000.
8. A polymer dispersion as claimed in any of the preceding  
10 claims, wherein the polymer particles contain in copolymerized form:
- 60-100% by weight, based on the total monomer units, of  
15 C<sub>1</sub>-C<sub>12</sub> alkyl (meth)acrylates, vinylaromatic compounds, or vinyl esters of C<sub>2</sub>-C<sub>12</sub> monocarboxylic acids, and
  - 0-40% by weight of (meth)acrylic acid,  
(meth)acrylonitrile, C<sub>2</sub>-C<sub>8</sub> hydroxy (meth)acrylate,  
(meth)acrylamide, or glycidyl (meth)acrylate.
- 20 9. A polymer dispersion as claimed in any of the preceding claims, wherein the polyelectrolyte and the polymer particles are in a weight ratio, based on solids, of from 5:1 to 1:10.
- 25 10. A process for preparing a polymer dispersion as claimed in any of the preceding claims, which comprises free-radically polymerizing at least one ethylenically unsaturated monomer in an aqueous medium in the presence of a combination of a water-soluble polymeric polyelectrolyte which along a  
30 polymeric backbone carries a large number of ionic groups of uniform charge character or groups which can be ionized to such groups, and an ionic surfactant which carries an ionic group having a charge character opposite to that of the polymeric polyelectrolyte, or a group which can be ionized to  
35 such a group.
11. The use of a polymer dispersion as claimed in any of claims 1 to 9 as a binder for moldings, sheetlike textile structures, or adhesives, or for coating purposes.
- 40 12. A method of producing two- or three-dimensional structures, which comprises contacting a particulate or fibriform substrate with a polymer dispersion as claimed in any of claims 1 to 9 and subjecting the substrate so treated to a  
45 curing step.

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13. A method of producing two- or three-dimensional structures, which comprises contacting a polymer dispersion as claimed in any of claims 1 to 9, a particulate or fibriform substrate and an aqueous phase with one another, in the course of which the polymer particles become coagulated, removing any excess aqueous phase, and subjecting the mixture of substrate and coagulated polymer particles to a curing step.

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